

61SiCr7 All

General Information

61SiCr7 is a Silicon Manganese alloy steel mainly used for heavy duty springs, but also used for tooling where impact resistance is of importance. As-quenched hardness is expected to fall within a range of about 58 - 63 HRC. Hardenability is considered fairly high.

Similar designations

1.7108, 60SiCr7 DIN 17221, 9260H, ASTM 9260, SB9064 - 61Si7 EN10027

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %
SB9064	CC	CEV 0.82 _{max}	Min	0.59	1.60	0.70	-	-	0.20
		Pcm 0.74 _{max}	Max	0.64	1.80	0.90	0.035	0.025	0.40
61SiCr7 EN10089:2002	CC	CEV 0.83 _{max}	Min	0.57	1.60	0.70	-	-	0.20
		Pcm 0.74 _{max}	Max	0.65	2.00	1.00	0.025	0.025	0.45

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Hardness
SB9064	+AR	Round bar	10 typical	< 330 HB

$R_{p0.2}$ * R_{eh} , ** R_{el}

Transformation temperatures

	Temperature °C
MS	238
AC1	772
AC3	814

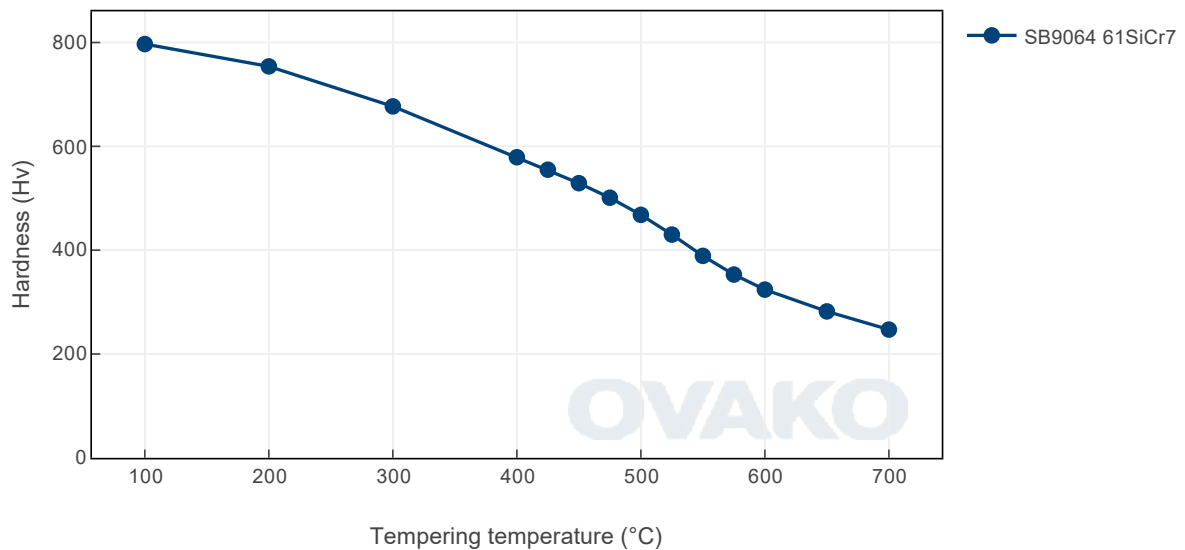
Heat treatment recommendations

Treatment	Condition	Temperature cycle	Cooling/quenching
Hot forging	+AR	Soaking 1000 - 1200°C	Slow cooling in air
Normalizing	+AR	Soaking at 900°C	In air
Hardening	+AR	Direct hardening, soaking at 870°C	Quenching in oil
Tempering	+QO	Tempering at min.150°C immediately after the temperature after hardening has reached 40 -50°C	In air

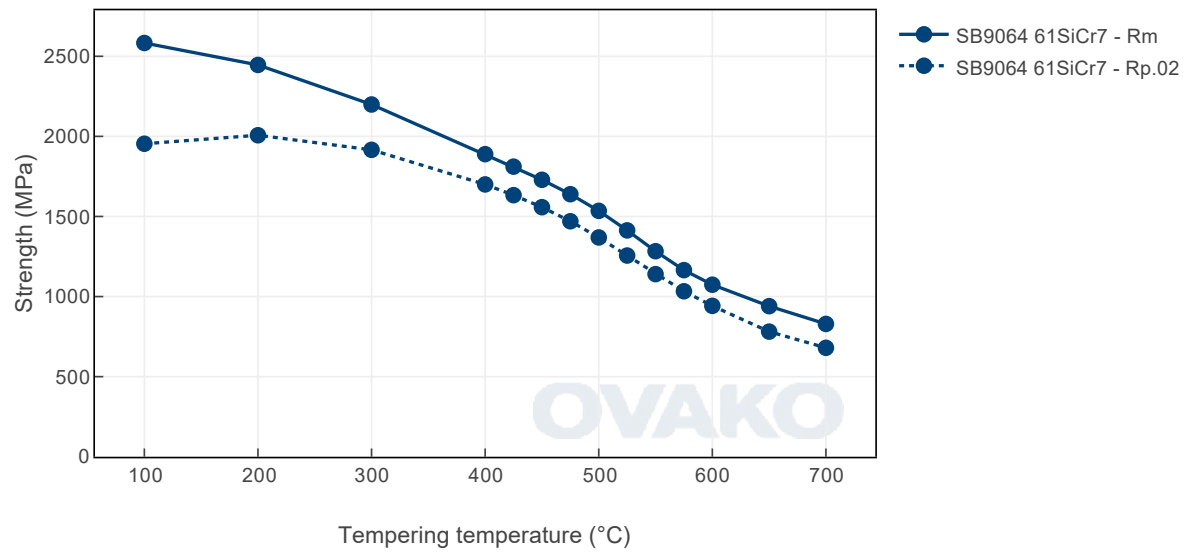
Heat Treatment Guide generated Graphs

The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.

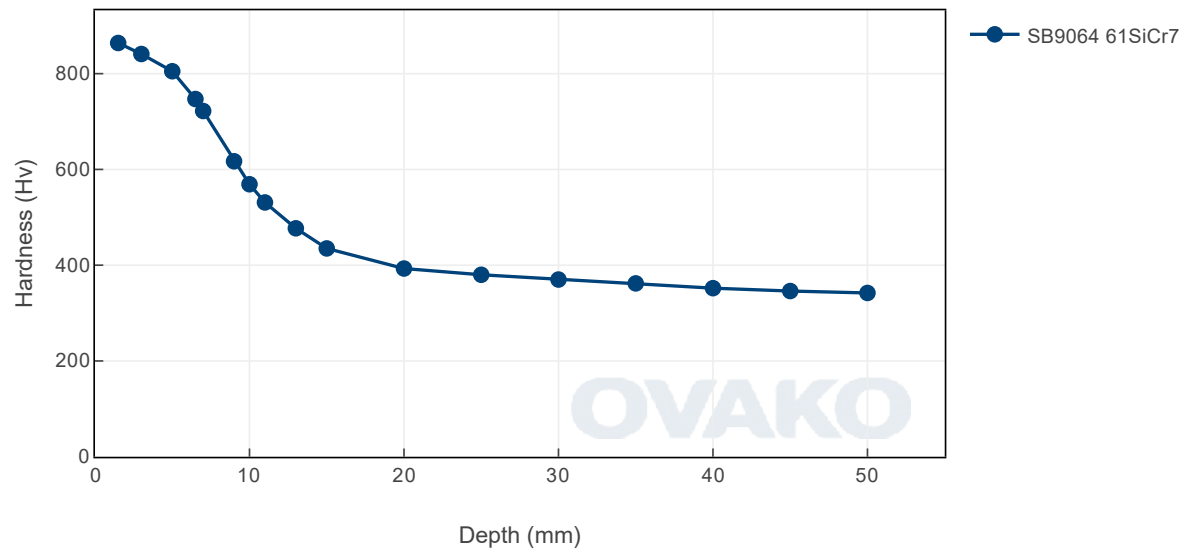
Tempering Diagram (hardness)



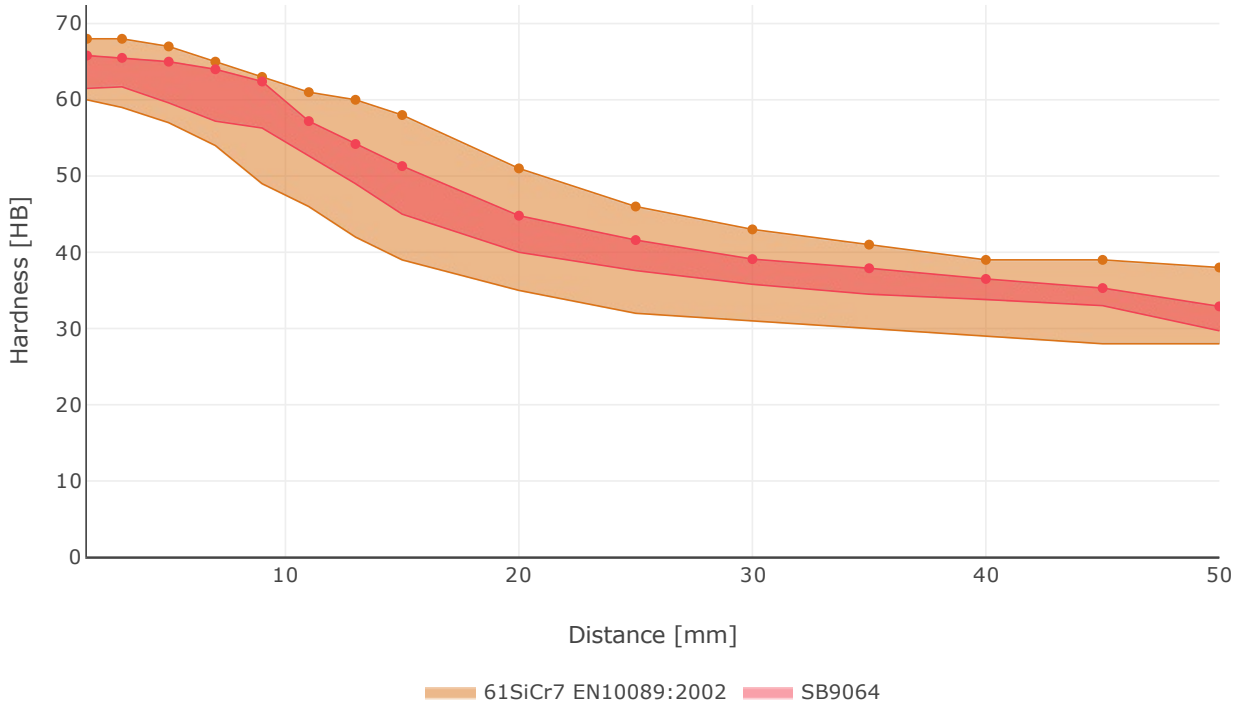
Tempering Diagram (strength)



Jominy



Hardenability



SUSTAINABILITY-ENVIRONMENTAL IMPACT DATA

At Ovako sustainability and reduction of our environmental impact is a major focus in everything we do.

Further information is found [here](#).

In many international comparisons the crude steel Scope 1-2 emission is a key parameter, ie. the CO₂ emission from the steel works itself.

As of 1 January 2022 we carbon offset all our scope 1 and 2 volume shown below.

Steel works	Hofors	Smedjebacken	Imatra
CO ₂ e/kg	120	62	76

To get the full picture of our products environmental impact we have to look at all of our CO₂ emission sources.

Not only the steel work Scope 1-2 itself, but all operations downstream in our production, heating and heat treatment furnaces etc (full scope 1-2) as well as all the emission from input material, eg. alloys, scope 3.

Steel Grade	Format	Condition	Scope 1-3 (CO ₂ e kg /1000 kg steel)	Climate compensated Net emission = Scope 3 (CO ₂ e kg /1000 kg steel) Scope 1 - 2 = 0 (compensated)
SB9064	Flat bar	+AR	395	207

As of 1 January 2022 we use carbon offset for all our scope 1- 2 emissions, so in practice the climate compensated data is the same as the full Scope 3 level.

All above data are to be seen as typical values for the specified format and condition. Detailed information about your specific product please contact your sales contact.

Other properties (typical values)

Youngs module (GPa)	Poisson´s ratio (-)	Shear module (GPa)	Density (kg/m3)
210	0.3	80	7800
Average CTE 20-300°C (µm/m°K)	Specific heat capacity 50/100°C (J/kg °K)	Thermal conductivity Ambient temperature (W/m°K)	Electrical resistivity Ambient temperature (µΩm)
12	460 - 480	40 - 45	0.20 - 0.25

Contact us

Would you like to know more about our offers? Don´t hesitate to contact us:

Via e-mail: info@ovako.com

Via telephone: +46 8 622 1300

For more detailed information please visit <http://www.ovako.com/en/Contact-Ovako/>

Disclaimer

The information in this document is for illustrative purposes only. The data and examples are only general recommendations and not a warranty or a guarantee. The suitability of a product for a specific application can be confirmed only by Ovako once given the actual conditions. The purchaser of an Ovako product has the responsibility to ascertain and control the applicability of the products before using them. Continuous development may necessitate changes in technical data without notice. This document is only valid for Ovako material. Other material, covering the same international specifications, does not necessarily comply with the properties presented in this document.